

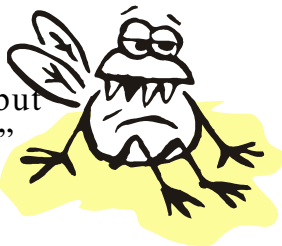
Mosquitoes, fleas and ticks are annoying insects that can occasionally spread illness when they bite.

When used properly, insect repellents can keep these insects from biting you. Unlike sunscreen products (that are designed for generous, frequent use), insect repellents are intended for limited, occasional use.

How do repellents work?

Many insects bite people or animals to get blood to grow or to make eggs. These insects are attracted to us by our movement, body odors, heat and moisture.

Many insect repellents (including DEET) contain chemicals that do not kill bugs, but make us “invisible” or unattractive to biting insects.



Repellents are only effective at short distances, so although you may have plenty of repellent on, you might still see mosquitoes flying nearby.

While DEET is a recommended, effective repellent for bite prevention, using it or other repellents is not the only way to avoid bites.

Other ways to avoid insect bites include:

- **Wear long pants and long sleeves while outdoors.** Tuck pants into boots or socks.
- **Use mosquito netting** over infant carriers and outdoor eating and sleeping areas.
- **Be sure doors and windows stay closed or are screened.** Screens should not have holes or rips large enough for insects to enter. If your house or apartment does not have screens, a quick solution may be to staple or tack screening (available from hardware stores) across the windows.
- **Stay inside or avoid certain areas** (wooded, humid areas or near rivers or other bodies of water) and **mosquito times** (early evening and morning hours).
- **Visit your veterinarian** if your pets have ticks or fleas.
- **Reduce the number of biters** in the area by getting rid of standing water and high grass or weeds that provide breeding places and harborage.

Itching for a Repellent?

Things to consider when choosing repellents:

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| <ul style="list-style-type: none">▪ Follow directions carefully. | Insect repellents are pesticides and improper use has been linked to serious illness. Read the directions each time, even if you’ve used the product before. Use only the amount directed, at the time and under the conditions stated, and for the purpose listed. Repellents that also list a sunscreen should be used like a repellent—apply only when needed and as little as possible to keep you from being bitten. If you need sun protection, buy a separate sunscreen. |
| <ul style="list-style-type: none">▪ The type of pest. | For example, if you need a tick repellent, make sure that the product label lists this use. If ticks are not listed, the product will probably not work for ticks. |
| <ul style="list-style-type: none">▪ Where are you going? | Some areas (such as wetlands, hiking trails, shaded woods) usually have a higher number of biting insects and a greater need for repellents than other areas (like shopping malls, front yards, and city centers). |
| <ul style="list-style-type: none">▪ Use the lowest concentration that works. | When it comes to repellent, more is not usually better. It is safer to <i>use the lowest concentration</i> of repellent that keeps you from being bitten. For example, the recommended DEET concentration for adults is less than 30% . |
| <ul style="list-style-type: none">▪ How often are you bitten? | Many insects use chemical sensors to find a meal. Some people are more “attractive” to insects than others. For example, mosquitoes seem to prefer blondes over brunettes, children over adults, and people that breathe or sweat more often than other people. |
| <ul style="list-style-type: none">▪ EPA label. | Check the container to make sure that the product is EPA-approved. The label will tell you the active ingredient (what’s keeping the bugs away) as well as the directions for use. |

Insect repellent application
Follow the instructions on the product. Using more than directed won't give you extra protection, but may increase irritation from the repellent.

Keep repellent out of your eyes, mouth, or broken skin (cuts, blisters and sunburns). These spots are pathways into your body. Also use sparingly around your ears.

Breathe clean air. Repellents can irritate your lungs. Do not spray the repellent while in a tent, confined space, or windy area. If using a spray—spray the product on your hands and then rub it on your face.

Apply, spray and store repellents away from food. Wash your hands after applying repellent.

Only apply repellent to exposed skin. Applying repellent under clothing can speed its absorption into your body. If you spray your clothes, wash them before wearing again to reduce your exposure to the chemical.

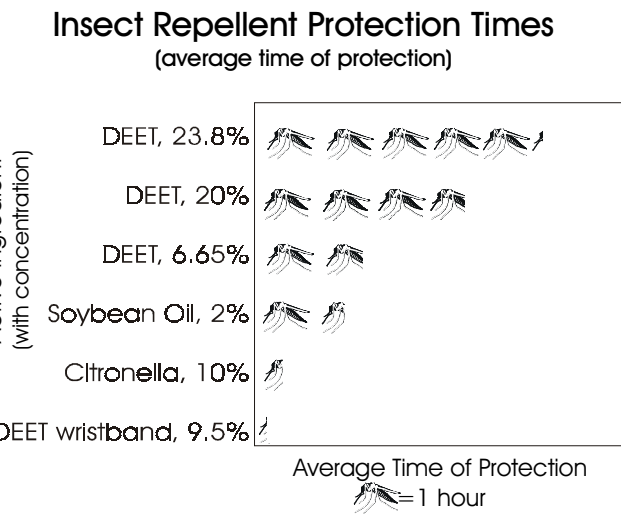
DEET generally doesn't harm cotton, nylon, or wool, but it can damage some fabrics such as rayon, acetate, and spandex, along with plastic eyeglasses, watch crystals and leather or vinyl car seats.

Wash the repellent off your skin when you come inside or no longer need protection.

Be extra careful with young children.

- Protect babies and children under 2 years old by keeping them away from insects instead of using a repellent.
- For children 2-12, use no more than a 10% solution of DEET.
- Even if the container says "Safe for Kids" don't let a young child (under the age of 10) apply or handle the product.
- Be careful not to apply repellent on a child's hands (to keep the chemical out of the eyes and mouth).
- If using a spray, spray your own hands and then rub repellent on the child. Wash your hands before you handle food.
- Wash the repellent off with soap and water when you come inside or no longer need protection.

How long do repellents work? A 2002 report in The New England Journal of Medicine listed the protection time of several insect repellents against mosquito bites.¹



What are symptoms of repellent reaction?
When used according to directions, DEET and other licensed insect repellents have a safe use record. However, some people may have reactions to repellents. Symptoms of reported reactions are usually linked to improper use and include: tingling skin (especially in the face), reddened skin, and a stuffy or runny nose. Wheezing, sneezing, and shortness of breath have also been reported. Eye exposures may result in damage and significant ingestions have caused seizures. Contact your doctor if you have symptoms or questions.

Plants as repellents
Many plants have been reported to repel insects. These plants include: citronella, cedar, pine, basil, geranium, lavender, cinnamon, rosemary, thyme, allspice, garlic, and peppermint.

When tested, most of these plant products usually give short-lasting protection ranging from a few seconds to less than 2 hours.

For more information contact:

Benton-Franklin Health District
Environmental Health Division
800 W. Canal Dr.
Kennewick, WA 99336
509.582.7761 ext. 246
www.bfhd.wa.gov

Other BFHD brochures:
West Nile Virus
Ticks and Lyme Disease

Environmental Protection Agency
www.epa.gov
www.epa.gov/pesticides

National Pesticide Information Center
<http://npic.orst.edu> 1-800-858-7378
<http://npic.orst.edu/factsheets/DEETgen.pdf>

The Pesticide Management Education Program at Cornell University
<http://pmep.cce.cornell.edu>

¹Fradin M, and Day J. Comparative Efficacy of Insect Repellents against Mosquito Bites. New Eng J Med 2002; 347:13-18.)

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Bite Back
outdoor safety series

**Using
Insect
Repellents
Safely**



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**ALWAYS FOLLOW THE DIRECTIONS
ON THE LABEL**